

Amendments to the Claims

This listing of claims will replace all prior versions and listing of claims in the application:

Listing of Claims:

1. – 32. (canceled)

33. (currently amended) A method of compensating for sample motion in the spectral analysis of a sample, said method comprising the steps of:

applying a chemical agent to a sample;

obtaining spectral data from said sample as a function of location;

obtaining a plurality of sequential images of said sample; and

aligning a subset of said plurality of images to compensate for sample motion, wherein said sample motion is a relative motion between said sample and a detection device that obtains said plurality of sequential images and said spectral data.

34. (previously presented) The method of claim 33, wherein said applying step comprises topically applying said chemical agent to said sample.

35. – 41. (canceled)

42. (previously presented) The method of claim 33, wherein, said spectral data comprises reflectance data.

43. (previously presented) The method of claim 33, wherein said spectral data comprises fluorescence data.

44. – 45. (canceled)

46. (previously presented) The method of claim 33, wherein said sample comprises human cervical tissue.

47. (canceled)

48. (previously presented) The method of claim 33, wherein said chemical agent interacts with said sample to alter an optical signal produced by said sample.

49. (previously presented) The method of claim 33, wherein said chemical agent comprises at least one member selected from the group consisting of acetic acid, formic acid, propionic acid, and butyric acid.

50. – 53. (canceled)

54. (previously presented) The method of claim 33, further comprising determining a characteristic of an area of said sample.

55. (previously presented) The method of claim 54, wherein said determining step comprises detecting an artifact.

56. (previously presented) The method of claim 55, wherein said artifact comprises an extraneous portion of an optical field of view.

57. – 58. (canceled)

59. (previously presented) The method of claim 54, wherein said area of said sample comprises human cervical tissue and said characteristic is abnormal health.

60. (previously presented) An article of manufacture having computer-readable program means with computer-readable instructions embodied thereon for performing the method of claim 33.

61. (previously presented) The method of claim 48, wherein said optical signal is produced at least in part by an endogenous chromophore.

62. (previously presented) The method of claim 61, wherein said endogenous chromophore comprises a molecule selected from the group consisting of NADH, collagen, elastin, flavin, hemoglobin, and porphyrin.

63. (previously presented) The method of claim 33, wherein said spectral data are obtained at substantially the same time said images are obtained.

64. (previously presented) The method of claim 33, further comprising the step of correcting said location according to said aligned images.

65. (previously presented) The method of claim 33, wherein said spectral data comprises both fluorescence data and reflectance data.

66. (previously presented) The method of claim 33, wherein said sample is *in vivo* tissue.

67. (previously presented) The method of claim 33, further comprising the step of determining an area of said sample for biopsy.

68. (previously presented) The method of claim 54, wherein said area of said sample comprises human cervical tissue and said characteristic comprises cervical intraepithelial neoplasia.

69. (previously presented) The method of claim 54, wherein said area of said sample comprises human cervical tissue and said characteristic comprises CIN II/III.

70. (previously presented) The method of claim 54, wherein said determining step comprises accounting for glare.

71. (canceled)

72. (new) The method of claim 33, wherein said aligning step comprises computing a cross-correlation of two of said sequential images.

73. (new) The method of claim 72, wherein said cross-correlation is a cross-correlation of sub-images of said two of said sequential images.

74. (new) The method of claim 72, wherein said two of said sequential images are successive images.

75. (new) The method of claim 72, wherein said two of said sequential images are gradient images.

76. (new) The method of claim 72, wherein said two of said sequential images are sum-of-derivatives images.

77. (new) The method of claim 72, wherein said aligning step comprises using a Hamming window.

78. (new) The method of claim 72, wherein said aligning step comprises determining a translation from said cross-correlation to align said two images.

79. (new) The method of claim 78, wherein said aligning step further comprises validating said translation.